Eastern and Northern Abyssinia. The whole—be it valleys, plains, or plateaux—is watered by countless streams; the soil, the detritus of volcanic rocks, is so rich, of such fertility, and enjoying as it does so many climatic advantages, we cannot be surprised if three harvests are usually reaped in a year. Teff, the staple food of the country, grows almost everywhere, except on the higher plateaux, where corn and barley thrive so well. Cotton covers the plains of Foggara; wine is made from the grapes of Mahdera Mariam; honey, fragrant from the sweet perfume of wild flowers, is ludicrously abundant; and the herds of cattle, in peaceful times, of such magnitude, in numbers hardly to be credited, enough to supply a thousand cities! Western Abyssinia, well may we exclaim, is indeed a land of milk and honey: a "land blessed by God, but cursed by man!"

III.—*Journey in the Caucasus, and Ascent of Kasbek and Elbruz.* By DOUGLAS W. FRESHFIELD.

Read January 11th, 1869.

WE left London on the 4th of January, last year, but it was not until the 26th of June that we were ready to start from Tiflis for the Caucasus. The intervening months had been spent in Egypt and Syria (where we were lucky in accomplishing a most interesting journey from Jerusalem to Damascus, *viâ* Jerash, Bozrah, and the so-called Giant Cities of Bashan), and in an expedition down to Tabriz combined with an attempt on Ararat, which was frustrated by the unusual inclemency of the season. From Erivan we returned to Tiflis by a little-known road, past Djelaloghu and Schulaweri, which, after skirting the base of Alaghos, crosses three mountain chains at an elevation of 7000 feet, and leads through some of the most exquisite woodland scenery in Georgia.

Our party had been of varying numbers, as long as we were on the high road of Eastern travel, but on leaving Constantinople my friend Tucker and I were thrown on our own resources, and the assistance of our trusty attendant François Devouassoud of Chamounix, who had been with us as a travelling servant from the outset. At Trebizonde we engaged, to act as interpreter, Bakwa Pipia, a Mingrelian by birth, who was generally called Paul, and had learnt French and cookery in European service. The main object of our visit to the Caucasian provinces was to explore the great mountain chain, and to ascend, if possible, some of its loftiest summits. I had spent many summers among the Alps, and often wished to visit some

other first-class mountains, to see how far the features of the scenery would resemble those with which I was familiar. When time and opportunity allowed me to carry out this scheme by a journey in the Caucasus, I was fortunate in finding a second comrade in Mr. Moore, who, unable to leave England in the winter, agreed to join us in June at Tiflis.

At Tiflis we received what help the Russian authorities could give towards an expedition the object of which was entirely novel to them. We have especially to thank, for much courtesy, General Chodzko, under whose superintendence the 5-verst Ordnance map was executed. This map, though by no means perfect, is, when the time and means at the disposal of its makers are considered, a very creditable production; it is particularly accurate in the distinction of the wooded and treeless districts. From it, a very careful relief model of the Caucasus, on a large scale, has been executed, of which a copy has recently been presented by the Czar to the Geographical Society of St. Petersburg. From Mons. Abich and Herr Radde we received some valuable hints, and the latter kindly, presented us with copies of his recent work, 'Die drei Hochthalern Imeritiens; Rion, Ingur und Tschenis Squali.'

The new Dariel road is now nearly completed, and is well made, although not equal in point of engineering to the best Swiss or Austrian highways through the Alps. On the south side the scenery is pretty, without being grand, and recalls parts of the German Tyrol. The valley of the Terek, on the north side of the pass, is of an entirely different character; treeless glens, bold rocks, slopes of steepness forbidding even to eyes accustomed to those of the Alps, and stone-built villages scarcely distinguishable from the neighbouring crags, but for the one or two towers of defence which rise above the surrounding hovels, form the main features of the 16 versts' drive from Kobi, the highest station in the valley of the Terek to the village of Kasbek. The observant mountaineer will previously have caught several glimpses of the summit of Mount Kasbek; but it is only on reaching the station that the magnificent mass is fully seen, towering thousands of feet above all its neighbours in the form of a steep-sided dome of snow, broken by masses of crag, the uppermost of which, a horse-shoe in form, is conspicuous in most views of the mountain from the east.

The weather was fine and promised to last. Anxious to profit by it we engaged a villager, said to know the mountains, to accompany us, and climbed to an old church perched on a lofty brow 1500 feet above the village. Thence we walked on to a summit about 10,500 feet in height. Our way to it led up a grassy ridge adorned with a rhododendron with large white

flowers, several kinds of gentian, and many other plants which lack of botanical skill prevents my naming. Kasbek was now directly opposite to us; a long glacier streaming round its south flank, and ending at our feet. From this point of view we saw the second or west summit, which is quite invisible from the station, but here appears equal in height to the eastern. This was a source of perplexity. I had throughout a strong belief that the eastern was the highest peak, but opinions were divided; one thing, however, was clear,—that from the glacier on the south flank of the mountain a series of crevasse-broken but easily surmounted slopes offered a way to a height of at least 15,000 feet, and that the gap between the two peaks could not exceed 16,000 feet in height. It seemed to us worth while to attempt to reach the gap by this route, and we determined to do so.

I may now, with the great mountain full in view, briefly advert to the position it holds amongst Caucasian summits, and to the legends connected with it.

From the earliest times Kasbek has taken a place in history, and has somewhat unfairly robbed its true sovereign Elbruz of public attention. Situated beside, and almost overhanging the glen through which for centuries the great road from Europe into Asia has passed, it forces itself on the notice of every passer-by. The traveller, who, if blessed by a clear day, sees Elbruz only as a huge white cloud on the southern horizon, as he jolts over the weary Steppe, is forced to pass almost within reach of the avalanches that fall from his more obtrusive rival. It is therefore not difficult to see why Kasbek has become famous; why in early times, the mass of crag, so conspicuous from the post-station, on the face of the mountain, was made the scene of Prometheus' torment; why later superstition declares that amongst those rocks a rope, visible only to the elect, gives access to a holy grot in which are preserved the tent of Abraham, the cradle of Christ, and other sacred relics. We were told by Mons. Khatissian (an Armenian gentleman, who has spent many months in the vicinity of the mountain) that the Ossetes occasionally call Kasbek Beitlam and Christ's Mountain; names which seem connected with this tradition. There is no doubt of the superstitious reverence in which the high places round the actual peak are held by the neighbouring population. The name by which it is now known, and which has been apparently accepted by geographers, to the exclusion of several more or less unpronounceable native names, is like Elbruz of purely Russian origin. A certain Prince Kasibeg, or Kasbek, who lived in the village of St. Stephen (the present Kasbek) was one of the first mountaineers to perceive that his best policy was to

recognise an accomplished fact, and acquiesce in Russian supremacy. He received his reward; the conquerors have given him immortality by conferring his name on the village in which he lived, and on the mountain which immediately overhangs it.

Even from the Russians, who, as a race, have no feeling for mountains (and regard them more as endurable eccentricities, than admirable beauties of nature), Kasbek has, during the last twenty years, attracted a great deal of attention.

Masses of ice falling from the great glacier of Devdorak, on the north-east side of the mountain, have blocked the stream in the glen beneath, and caused calamities similar to that in the Val de Bagnes. On our arrival in the Caucasian provinces we were told "Oh! you are just in time to see the great avalanche from Kasbek!" Enquiry showed that, a few years since, the Dariel road was swept away, and that a similar calamity was thought imminent during the coming summer. Everyone in Tiflis was talking about it, but happily the event never came off.

Several attempts have been made by Russian officers to reach the top of Kasbek, but with very little success, owing to the exaggerated fears of their native guides, and their own lack of proper mountaineering gear (rope, ice-axes, spectacles, &c.). Hence we found in the Caucasus a wide-spread belief in the inaccessibility of the peak, and the Tiflisers looked upon us with a mixture of amusement and pity as "the Englishmen who were going to try to get up Kasbek."

On our return to the post-house we were delighted to find that the Governor of Tiflis (whose acquaintance we had already had the pleasure of making) had arrived, accompanied by the Commandant of Duschet. They had come thus far to welcome the Grand Dukes Alexis and Michel, who were on a tour through the Caucasian provinces; and now, entering heartily into our plans, they rendered us all the aid in their power in making our arrangements.

The most experienced mountaineers of the village were at once summoned; to wit, three aged men, all more or less lame or blind, who in the way they nodded their heads together, and by their occasional outbursts of eloquence, reminded us forcibly of the old men's chorus in 'Faust.' We settled with them to take four men as porters at 2½ roubles (7s.) each a day; they were to follow where we led, and to pitch our little tent where we directed. I must do them the justice to say that they carried out their part of the bargain with an honesty and good humour which led us to form an unluckily premature estimate of the general character of the people with whom we should have to deal.

In the evening we witnessed a picturesque sword-dance performed by some mountaineers in chain-armour, who had come down from a neighbouring village to greet the Grand Dukes.

KASBEK.

On Tuesday morning (30th June) we started with a parting benediction from the two Governors. Leaving the church-crowned hill to the left, we went up the glen, passed over rough ground beside the torrent, and followed a fair track to a projecting bluff. A long and steep ascent, beguiled by the variety and beauty of the flowers, brought us close to the snout of the glacier, which (as I have said before) sweeps round the south flank of Kasbek, and, despite many remonstrances from the porters (who were already getting beyond their beat), we climbed on up the slopes on its true left bank, until at a height of 11,100 feet we found a most suitable spot for a bivouac. It was a mossy plot in a hollow, sheltered on one side by the moraine, on the other by a rocky spur of Kasbek. Here we pitched our tent, and passed a very fair night.

The weather, after sundry fluctuations, settled fine; and, at 2·45 A.M. on the morning of the 1st of July, we, that is Moore Tucker, and I, with François, set off on our adventure.

Before leaving the tent we, by pre-arrangement, fired off a pistol to give notice to the porters, who had retired to lairs at some little distance, and out of sight. No one answered the summons, and we set out unattended, carrying only our rope and sufficient provision for the day. The morning was calm and lovely; we fully enjoyed the moonlight view of the grand "cirque" and ice-mailed peaks around, and the glorious sunrise flush which succeeded it; then mounting the left side of the glacier, which was but little crevassed, we gradually rounded the base of the eastern peak of the mountain. Arrived at some rocks where the tributary glacier from between the two summits joined the main stream, we halted to put on the rope, before we turned up the face of the mountain. Ascending at first by rocks, afterwards by broken slopes of nevé, we gained height rapidly, bearing somewhat towards the base of the west summit. At 6·30 A.M. we found ourselves at 14,800 feet above the sea, only 1800 feet below the top. Some fine snow-peaks, which we afterwards knew better as the Adai Khokh group, were conspicuous to the west. At this time the view was magnificent and perfectly clear; to the south the eye already ranged over the main chain of the Caucasus, and across the valley of the Kur to the hills beyond, while behind the rugged ridges which rise on

the east of the Terek valley, the peaks of Daghestan raised their snowy heads. From this poiut our difficulties began: the crevasses became large, and had to be dodged; François resigned the lead to Tucker for 40 minutes, during which the favouring snow-slope was exchanged for blue ice, covered with a treacherous 4 inches of loose snow. The work of cutting steps in this was laborious, and François presently again went to the front. An incident soon occurred which might have been serious. A huge icicle-fringed crack in the ice, 3 or 4 feet wide, of which the upper lip was about 5 feet above the under, barred our progress. (Any Alpine climber will recognise his old enemy the Bergschrund). François was leading; we had all safely passed the obstacle, when the rope, which in the difficulty of the passage had become slackened between Tucker and Moore, hitched round one of the big icicles in the crack. Having in vain tried to unhitch it, Tucker began to cut steps downwards towards the upper lip of the crevasse. At no time is this an easy thing to do: try to do it in a hurry, and what now happened is almost sure to occur; the step-cutter overbalanced himself, his feet slipped out of the shallow footholds, and he shot at once over the chasm. The rope tightened with a jerk on Moore and myself, who however held fast, and we had to hold for many seconds before our companion, whose head was down the slope, regained his footing. The escape was a narrow one, and we had reason to be thankful that neither the rope nor our axes failed us at so critical a moment.

Our order re-established, we attacked the exceedingly steep ice-slope which separated us from the gap between the two summits. This part of the ascent was extremely difficult and required the greatest care. The ice was thinly coated with snow; sometimes rendering the climb easier, but generally more dangerous. Now and then the snow was thick enough for a few yards, to allow us to dispense with cutting steps through into the ice, but more often it impeded our progress, as, aided by a strong wind, it filled up the footholds almost as soon as they were made, and obliged each man to rescoop them. For four hours we had to cling to the slippery staircase, with knees and hands, as well as feet and ice-axes, exposed to a furious wind, which drove showers of snow and ice into our faces. In such a position time flies rapidly, and it was not until 11 A.M., when François was again exhausted with the labour of leading, that we gained the saddle between the two summits. Our first care was to examine the ground below us to the north where a steep slope fell away from our standing place to a great nevé plateau about 2000 feet beneath. We rejoiced to see no serious difficulty, for we had all independently arrived at one conclusion—

that nothing short of dire necessity should make us descend the way we had come up. There was no doubt now that the east peak was the highest; so, after snatching a morsel of food, we left François to recover himself on the snow, and set out afresh by ourselves, Tucker leading. The final climb was not difficult: we cut steps up a bank of hard snow, scaled some rocks (where François rejoined us), and then found ourselves on the snow cupola which crowns the mountain. A few steps brought us to the edge of the south cliffs, along which we mounted; the snow-ridge soon ceased to ascend, then it fell away before us; we saw for the first time, the valley of the Terek under our feet, and knew that we stood on the highest summit of Kasbek. It was just mid-day. The cold, arising from the high wind, would not allow us to stop on the actual crest; but we sat down half a dozen feet below it, and tried to take in, as far as possible, the vast panorama spread out beneath us. Clouds had by this time choked up the valleys, and covered the great northern plain, but the mountain peaks were for the most part clear. We were surprised at the apparent grandeur of the ranges to the east, where group beyond group of snowy peaks stretched away to the far off Basardjusi (14,772), the monarch of the Eastern Caucasus. Nearer, therefore more conspicuous, was the fine peak of Schebulos (14,781). To the west the first object which caught the eye was the lower, western, summit of Kasbek, an ugly looking peak with its long knife-edge of ice and rock. In the distance we eagerly sought for Elbruz, but found it not: whether veiled by clouds, or hidden behind the projecting masses of the Koschtantau group, I cannot say. (We fancied afterwards that we recognised Kasbek from Elbruz; of course in this case the converse is possible, but the distance between the two mountains is great—120 miles as the crow flies—and we cannot speak positively on the subject.) Except in the immediate vicinity of Kasbek there seemed to be but few and small glaciers nearer than the Adai-Khokh group on the further side of the Ardon Valley.

After a stay of about 10 minutes we quitted the summit, where we could not leave any trace of our visit. We had no stick to fix upon the snow dome; we could not spare an ice-axe, and the rocks were too big to use in building a stone-man. The return to the gap was quick and easy; we did not halt there long, knowing we had a long afternoon's work before us.

The first 100 feet of descent down the hard snowbank on the north side was steep enough; I was ahead, and too lazy to cut good steps; an error which caused Moore's barometer a jolt which upset it for several hours, happily the little thing recovered during the night, and told us our approximate heights

for many a day afterwards. The slope soon lessened, and allowed us to give up axe-work, and we trudged straight and steadily downwards until we were almost on a level with the extensive snow-fields we had looked down on from above. There we halted to consider our course. We were on an unknown snow-plain, 14,000 feet above the sea, and it was most undesirable to risk our chance of reaching "terra cognita" ere nightfall, by any rash or hasty move. One plan suggested was to turn to the left, and cross a snowy ridge we had reason to believe divided the plateau we were on from the nevé of the glacier by which we had ascended; this course, if successfully followed, would bring us back to our tent and baggage. The fatal objection was its probable length. We determined to keep nearly due north across the snow-field towards a ridge, dividing two glaciers which flow into different branches of the glen of Devdorak. There was no difficulty in crossing the plateau to the rocks which bound the first glacier on the north. We kept under the rocks on the left side of the glacier, until the ice became so steep and broken that the possibility of further descent by it seemed doubtful, and after some delay (while François reconnoitred) we climbed to the crest of the ridge at a point where it is crowned by two very remarkable isolated rock-towers which are seen from afar, and may be useful as finger-posts to future climbers. The view of Kasbek from here is superb; its whole north-east side is a sheet of snow and ice broken by the steepness of the slope into magnificent towers, and seamed by deep blue chasms.

We were now glad to find a reasonable prospect of returning from our eyrie to the lower world without too much difficulty. We followed the ridge between the two glens, sometimes we crossed a snowy plain, sometimes hurrying down rocky banks, until a series of long snow-slopes allowed us to glissade merrily to the rocks at the foot of the second glacier. A rocky barrier shut out the view of the lower part of the glen; before we reached its brow, mists swept round us, and for two hours we were enshrouded in a dense fog. We traversed a savage gorge, pressed in on either side by huge walls of crag, where but for the path afforded by the avalanche-snows which covered the torrent we should have been puzzled to find a means of exit; when this aid failed us, the bed of the stream became a mere cleft in the rocks; we made a sharp but short ascent to the right and happily hit on a barely traceable track, which led us down by steep zigzags into the same glen below. More than once the track was lost and found; until the mists having lifted somewhat, we at length saw that we were close to the junction of the torrent with that from the principal Devdorak glacier. Cows

and goats were grazing on the grassy brow between the two streams, and as it was now 7·45 P.M., we debated whether to stop here for the night.

The herdsmen, an old man and two boys, gave us information which decided the question. Our communications were by pantomime, but we gathered without much difficulty that the Devdorak torrent was bridgeless and big, that they had fresh milk, and would allow us to share their shelter. It was but a hollow under a partially overhanging cliff, enclosed by a low wall that afforded poor protection against the attacks of inquisitive sheep and goats and the drizzling rain which fell all night, but we managed, with stones for pillows, to snatch a good deal of sleep.

The preparations for our start the next morning did not take long. The chief herdsman accompanied us to the Devdorak torrent, which at this time of day was fordable; and one of the boys volunteered to go with us to the post station, and relieve François of some of our traps. A well marked path led us above the united torrents; on a neighbouring brow we were told stands a pile of stones, resembling an altar in shape, and covered with the horns of chamois and bouquetin. This spot is held sacred by the pagan inhabitants of the neighbouring village, and once a year they all repair here, sing strange chaunts, and make offerings to the "genius loci." Ere long the defile of the Dariel opened beneath us, and a short descent brought us to the Terek. After half a mile along a meadow covered with old tombstones, we crossed by a bridge to the high road. A long up-hill pull of 8 versts (5½ miles) brought us to the village of Kasbek, and about 9 A.M. our best "jodels" aroused the people at the post station. Our arrival did not create much excitement at first. The people seemed to take it as a matter of course that we had not really been to the top, but equally as a matter of course that we should say we had. We roused up Paul, who, still unable to shake off an attack of fever, was in a very stupid and gloomy mood; through him we sent off a messenger to look for our porters, whom we had left encamped at 11,000 feet the previous morning. The commission was quickly executed. In the evening the porters returned, bringing in safety all our belongings, including a pair of spectacles, which had been mislaid in a start in the dark. The men had supposed us lost, and now, overjoyed to see us again, talked, kissed, and hugged us all simultaneously. The excitement among the villagers grew intense. The porters told them that we had disappeared up the mountain, and that our tracks were visible to a great height on the southern face, the shepherd boy was a witness to our mysterious appearance on the other side the same evening; the two facts showed that we must have

crossed the mountain very near the top, and we suddenly found ourselves installed as heroes instead of humbugs in the public opinion of Kasbek village. The old men's chorus by whose help our first arrangements were made, came in during our supper, when more kissing and hugging had to be endured. The chief of the party was very excited and enthusiastic in his congratulations, and dilated at length on the captains, colonels, and even generals, who with companies of Cossacks to aid them, had desired to do what we had done, and failed. We tried to explain to him the use of ropes and ice-axes, and to show that they were much more useful on a snow-mountain than any number of Cossacks.

The Chain of the Caucasus. Kasbek to Elbruz.

July 3.—It was less than a week since we had left Tiflis; already the first piece in our programme was accomplished; and the most formidable of the two great peaks we had pledged ourselves to attack was successfully disposed of. We had now to turn our thoughts to the less imposing, but really far more difficult, task of making our way along the foot of the main chain of the Caucasus from Kasbek to Elbruz, a distance of 120 miles. Before leaving England, we had studied German maps, which, although shown by better acquaintance with the country to be often inaccurate, yet gave a sufficiently correct idea of the disposition of the upper valleys on either side of the watershed, to enable us to form a plan for our proposed " high-level route." Since landing at Poti, we had learnt that the Mamisson, one of the passes we intended to cross, was well known to, and occasionally used by, the Russians. Beyond this we could gain from the officials little information, and the plan of the journey we had worked out was scouted by them as impossible. A volume given me by Herr Radde, containing the account of his last explorations in the higher valleys of Mingrelia, showed us that he had traversed, at different times, all the country west of the Mamisson, to a point south of Elbruz, with the exception of one short link, between the valleys of the Rion and Tskenis Squali. It is, however, one thing to make excursions from a base to which you can return for supplies, and where you can leave much of your baggage, and another to push on from point to point, carrying everything with you, and harassed by the constant difficulty of engaging fresh porters. We saw no reason, however, to give up our original plan, despite the small encouragement it had received from others, and accordingly, on the morning after our return from the ascent of Kasbek, we were ready to drive back to Kobi, where we purposed to bid farewell

to post-roads, and such civilisation as they carry with them, and to adventure ourselves among the primitive paths and native inhabitants of the mountains.

The upper basins are enclosed by double ranges, for on both flanks the main chain is guarded by lower, but very considerable limestone ridges, the continuity of which is broken by deep gorges, through which the rivers, rising in the glaciers of the central mass, force their way. In this part of the chain—that is, from Suanetia on the west, to the east source of the Rion, the relations of the watershed and the two lateral ridges, though sometimes interrupted, or rendered indistinct, are on the whole easily traceable. The next section eastwards presents, at first sight on the map, a curiously changed aspect. The watershed having for so large a space run from north-west to south-east, bends suddenly due south, and sinks to the comparatively low gap of the Mamisson Pass. After a few miles it resumes its former direction, but entirely fails to recover its former grandeur. Although peaks rise frequently to heights of 11,000 and 12,000 feet, they support but few and small glaciers; and the passes between them vary from 7500 feet (the height of the Krestowaja Gora) to 9000 feet. North of this unworthy watershed we find a line of summits averaging at least 14,000 feet, and terminating in the noble outwork of Kasbek, 16,540 feet. A second glance at the map shows that this row of noble peaks is in an exact line with the glacier-crowned chain which forms the watershed further west; and that the ridge which now divides the basins of the Kur and the Terek, is in fact the continuation of the southern lateral range.

There are three points in the configuration of the Caucasus which I may here point out—first, that many of the upper valleys are troughs running parallel to the main chain; secondly, that these mountains differ from the Alps in having no lakes corresponding to those of Switzerland or Lombardy on either side of them; thirdly, the chain has no ramifications corresponding to those of the Alps in the Oberland and Tödi groups.

When we left Kobi, the obvious line of march for a party who wished to follow as closely as possible the foot of the main chain, where the finest scenery might be expected to be found, was to ascend the Terek to its source, cross to the Ardon, descend the eastern, and mount the western branch of that river, traverse the main chain by the Mamisson Pass, then work along the upper basins of the Rion and Ingur.

The only difficulty apparent on the map was the transit from the head-waters of the Rion to those of the Ingur, where several ridges enclosing the sources of the Tzkenis Squali barred the

way, and the glens between them seemed to be without inhabitants.

In order to make our course as clear as possible, I shall divide our journey into five stages. The 1st, through the north valleys to the Mamisson Pass, where we crossed the main chain; the 2nd, the Rion basin; the 3rd, the sources of the Tzkenis Squali; the 4th, Suanetia, or the upper Ingur valley; and the 5th, the Baksan valley and Elbruz.

It took us four days to reach the south side of the Mamisson Pass from Kasbek. On the second we crossed, by a pass at least 10,500 feet in height, from the source of the Terek to that of the Ardon. The upper valleys of these two rivers are entirely bare of trees, and the scenery is consequently savage and somewhat monotonous. Owing to the want of wood in this district, the house are built entirely of stone; they are generally gloomy-looking masses of rough masonry, in which small holes are left for the windows; but the peculiar character of the villages is given by the number of towers which they contain, often in the proportion of two towers to three houses. There is nothing picturesque in these primitive fortresses, which, from their walls sloping inwards towards the top, resemble an elevated brick-kiln. At Res, the highest village in the Terek valley, we had to leave our horses and engage porters. The weight each man carried was ludicrously small, and we were forced in consequence to take a train of ten. The boots of these Caucasian mountaineers are too peculiar to be passed over without mention. A tangle of leather bands is stuffed with dry grass, and then bound round the foot, the sole being thus removable at pleasure. These primitive sandals seem to be everlasting, and to afford the feet sufficient protection from rocks and cold. For some time we thought they must fail on snow or ice; but the way in which the Pari men, thus shod, climbed the steep slopes between the valleys of the Ingur and Baksan quite removed this prejudice.

On reaching Zacca, the highest village in the Ardon valley, the Res men had to be paid off. At first they quietly accepted the sum agreed upon, but soon began to clamour for an extra rouble, as "backsheish," or "trinkgeld," or whatever is the Ossete synonym for those world-wide terms. We had sought refuge from a noisy and intrusive crowd of villagers, in a house close by, where we admitted only a select few of the elders, to satisfy their curiosity. At first we took no heed to the everyday sound of angry voices; but the row becoming serious, my friends sallied forth and found the Res men hustling Paul, who, spluttering with rage, was laying about him with a stout stick, while the people looked on and laughed. One of the Res

scoundrels now seized Paul's sheep's-skin cloak, and they all hastily retired, carrying it with them. At this point of the proceedings I came upon the scene—saw Paul frantically excited, and our late porters, in a knot fifty yards off, with our cloak in their possession. Ignorant of what had passed, and fancying that a prompt move would settle the question, I ran up to the men of Res, took hold of the cloak, and motioned to them to drop it. Far from this, they began to pommel me after a fashion—fortunately a very harmless one, consisting of roundabout windmill pats on the top of the head. This may be a very effectual way of bonneting an adversary who wears a tall sheepskin; but it is singularly harmless to a man with a hard wideawake. In self-defence I quickly dropped the cloak. In a few seconds my friends came to the rescue—one hitting straight into the eyes of the thieves; the other charging them with his ice-axe. After some dozen blows had been given, the foe suddenly fled, carrying off the cloak with them, but leaving us in possession of the field of battle, and did not stop until they had put the river between us. Our next move was to turn to the chief of the village, ask how it was that he stood by and allowed strangers to be robbed, his own people aiding and abetting the thieves? The only reply of this noble mountaineer was, that he would get back the cloak if we would pay him for it! This was an Ossete, one of the tribe Count Leverschoff told me that we should find the "gentlemen of the mountains." This tribe is one of the most celebrated of the Caucasus, and has caused some disputes among Russian ethnologists, owing to their having a peculiar language, of which many words are said to resemble German. They have been converted to Christianity, which they now profess, although they trouble themselves little about either its letter or spirit. Their worship is mixed up with sacrificial feasts of apparently pagan origin, and the doctrines they hold are compatible with a severe law of vengeance, resulting in long and bloody feuds between families and villages. There seems to be no poor class among them; all the men we saw were well and even handsomely dressed. The tall sheepskin hat is universal, and great attention is bestowed on the numerous ornamental details of their costume. The cartouche-boxes on the breast are generally inlaid with silver. When they go abroad, they invariably wear a belt, to which is attached a double-edged dagger, like the Roman short-sword, enclosed in an ornamented sheath; on the other side hangs a heavy flint-and-steel pistol; besides these, they carry a variety of smaller necessaries, such as a leather case for tinder and flints, a knife, and a little box of oxidized silver, prettily worked, in which they keep the grease to anoint their bullets.

We slept two hours below Zacca. The next day, in order to reach the lower valley, we had to cross a grassy ridge, over 9500 feet in height, whence we gained an admirable panorama; from hence to the Rion valley we met with nothing remarkable either in scenery or adventure.

The change of scenery which awaits the traveller who passes from the treeless valley of the Ardon, into the richly-wooded basin of the Rion, which I have called the second stage of our journey, is marvellous and sudden. The upper basin of the Rion consists of two valleys—that of the real Rion, and of its first considerable affluent, the Dshandshachi Squali, which both run parallel to the chain for many miles, until at their junction they turn south, and find an exit through a narrow gorge, between the serrated ranges of the Schoda and the Wallatschibis mountains, which shut in the upper valley on the south. On the north, behind a mass of rounded "vorberge," the summits of which barely rise above the limit of the forests, towers the continuous wall of the main chain of the Caucasus. The highest peak of this part of it looks down on the east end of the basin, and is well seen from the valley. What it ought to be called is still uncertain. On the five-verst map we find the name of Adai Khokh given, and a height of 15,244 feet assigned it; but Herr Radde dissents from this, and says that the people of Glola call it the Twiulsas Mountain. Caucasian nomenclature is in an almost hopeless state of confusion. The five-verst map, our chief stand-by, is constantly contradicted by Herr Radde's more careful researches, which he has unfortunately not as yet embodied in any corrected map. I shall, therefore, avoid giving more names than are necessary; and I think that if I give the commencement of a catalogue of the peaks north of the Rion sources, my readers will thank me for my forbearance. They are the Sarziwisdsiris Mountain, the Sagebigora, and the Chiorölioto, and the Sopchitigoram Mountain. I do not think I need go any further!

The lower slopes of the Rion basin are clothed with the most magnificent forests. The botany of the country has been dwelt on at length by Radde, and those interested in it will find copious details in his work. I shall confine myself to general features. The pines are not here, as in the Alps, the highest trees. Above them is found a zone of birch, terminating at about 7500 feet, which, speaking roughly, may be taken as the limit of trees in the Caucasus. Higher still we come upon dense masses of white Caucasian rhododendron, which takes the place of the pink alpenrosen, and is succeeded by gentians and the common Alpine flowers, which grow just below the snow-level. We were delighted to find many English friends among

the flora of a Caucasian Alp, such as snowdrops, cowslips, and primroses. Under the shade of the forest, and in its glades, grows a thick underwood of azaleas—wild honeysuckles and roses. The effect of deciduous trees growing nearest the snow is very striking—the upper pasturages of the Caucasus thus often combining the grandeur of the Wengern Alp with the woodland attractions of an English park. The inhabitants of this beautiful valley are of a very different race to the Ossetes, whom they do not equal either in personal appearance or dress. Their cartouche-boxes are of wood or bone; their dagger-sheaths and belts are unornamented with silver; and in place of the tall sheep's-skin hat, they wear a headdress, either the baschlic, tied up in a sort of turban, or felt wideawakes of the most varied and eccentric shapes. They look what they are—needy peasants. They are, however, less hostile to strangers, and in the villages in the east branch of the valley (which, owing to their being on the road to the Mamisson, are more under Russian influence) we found the people really hospitably disposed. At Gebi and Tschiora, in the west valley, our dress, accoutrements, and luggage were a source of unaccountable amusement to the large circle of which we were constantly the centre. The greatest excitement was caused by the sight of our pocket-handkerchiefs and our manner of using them; a performance the repetition of which, after it had been once witnessed, was looked forward to with eager expectation. It is a difficult thing to blow one's nose in a duly solemn and dignified manner before an audience of 150 people; but we had frequently to do it. Though we were objects of intense curiosity, and of frequent attempts at imposition, we had no reason in this valley to complain of any annoyances which may not be met with in countries far more civilised than the Caucasus. Thus much knowledge of the Rion valley was easy to attain; but we were not satisfied to rest in ignorance of what lay beyond and behind the snowy wall which bounded every northward view. We wanted to learn something of the breadth and character of the central ridge of the Caucasus.

To follow out these views, we left Paul and the baggage at Tschiora, and taking François with us, we set out at 2 A.M. on the 10th, to cross the main chain by a glacier-pass, known to the natives, to the valley of the Uruch. A porter came with us to the snow-level. We had a lovely walk along grassy ridges; finally over one of 8500 feet, and down by a provoking descent to an alp, wooded like an English park, and overtopped by a tall snow-peak. The head of the glen before us was filled by a steep glacier. A long climb up the slopes on its right brought us above the icefall. The col is as much a glacier-pass as the St. Theodule; there is even a bergschrund, and we were sur-

prised to meet large flocks of sheep crossing the chain; but the animals (including the dogs) seemed quite accustomed to the work. We missed the usual pass, and unintentionally made a new "col" by going up to the head of the southern glacier. The col itself was a most curious notch, with little distant view; the scene was of extreme wildness and grandeur—great towers of rock shooting out from below, between which a very steep snow-slope plunged down to the glacier. The descent of the snow-wall, although terrifically steep, and practicable only owing to the perfect condition of the snow, was not difficult, and brought us down on a glacier flowing north-east into the Zenaga valley. There were no crevasses, and we bowled down to its foot, then through a rough glen, and emerged on a knoll overlooking an enormous glacier, coming from we could not tell where, and falling beneath us into a fir-clad valley, in which we could see the fields and villages. Here, at a height of about 7000 feet, we found a patch of pine forest, lying close to the junction of the glens, and made a snug bivouac under an overhanging rock, with a spring of water handy.

At daybreak the next morning we set out to force our way back over the great glacier to the Rion valley. An hour was consumed in getting over the very rough ground at the mouth of the glen we had descended in the evening; then we found a capital path, which led us along the side of the glacier to a shepherd's hut, whence we got our first view of the work before us. In the foreground was the broad stream of the lower glacier, which poured out between two magnificent rock-peaks, terribly escarped, of at least 14,000 feet in height. Directly between these great cliffs was an enormous ice-fall, nearly 4000 feet in height. We were about three hours to its foot. For some time all went well; but difficulties got thicker and thicker, till, after trying place after place, going round some big crevasses, and descending into others, we nearly despaired of making a way through the magnificent séracs of the great ice-fall. Time and the axe, however, did their work; and after spending six hours among the séracs, we were fairly on the upper snowfields. The extent of these, as they gradually opened to us, was almost appalling. They seemed Himalayan in magnitude, but allowance must be made for novelty; and I daresay that, if the first explorer of the Oberland had forced his way up the Jungfrau Joch, he would have been rather taken aback by the view of the Aletsch glacier. We were surrounded on all sides by rugged peaks. The nevé spread away in two great bays. Utterly ignorant of our exact position, we selected the western. The snow was tolerably soft, and the work heavy, each man taking the lead in turn. At last (about 4 P.M.) a distant peak rose over the snow

before us, and we found ourselves on an almost imperceptible watershed, overlooking the green ridges and dark forest-clad valleys of the Radscha, the general name given to the district between Koutais and the main chain. Soon, however, the slope steepened, and a comparatively short glacier plunged down from our feet. Its ice-fall seemed impassable, and remounting, we found at last that friend in need, the snow couloir, which let us comfortably down to the lower world, and we succeeded in reaching the forest ere nightfall. We halted beside a brook, and slept as well as could be expected on a steep slope, where we had to pile branches to make a couch sufficiently level to prevent our rolling down into the water in our sleep. The weather for the last two days had been lovely; now rain threatened, but fortunately held off. We descended next morning to the Rion valley at Glola—having completely succeeded in our object—to learn something of the real character of the central ridge at this point.

The result of our double passage of the chain on either side of Tau Burdisula was to show the important position of that peak, and its character as the corner-stone of one of the principal groups of the Caucasus. From the western sources of the Rion to this mountain the central chain is a single ridge, and is too narrow to support nevé plateaux, capable of feeding a first-class glacier. From Tau Burdisula a second chain, nearly if not quite equal in height to the watershed, branches off, and the two ridges, running for some distance nearly parallel, enclose between them the great snow-fields, which find an exit to the north in the tremendous ice-fall up which we had forced our way. From the complication of its ridges, the heights of its peaks, and the number and size of its glaciers, the portion of the chain between Tau Burdisula and the Mamisson well deserves to be distinguished as a group after the manner of the Monte Rosa, or the Mont Blanc group; but while the name of its highest summit remains uncertain, I cannot presume to fix on the title which will best befit it.

The next stage in our journey was the three days' walk, or rather struggle, through wet woods, from the Sassagonelli Alp, at the head-waters of the Rion, to Jibiani, the highest village in the Ingur valley. During this time we were threading the valleys which contain the sources of the Tzkenis Squali. Most of the maps and books which treat of the Caucasus fall into serious error in this neighbourhood. They represent the Tzkenis Squali as rising entirely on the south side of a spur of the main chain, and give the idea that only one ridge separates the Rion and the Ingur; whereas it is necessary to traverse no less than three ridges between them. I can say nothing of the inhabi-

tants, for the best of reasons, that we did not meet any. There are now no villages, or even shepherds' cabins, in the upper valley, although the ruins which here and there rise above the dense forests show that this has not always been the case. The central chain is less imposing here than further east or west, and the distinguishing feature of the country is the extraordinary rankness of the herbage, which is brought more home to a traveller's feelings by the general absence of path, which compels him to force his way through the tangled forest. Once descended from the ridge of the Goribolo, which separates the Rion and Eastern Tzkenis Squali, we were either entangled in dense thickets or wading in the glades, through vegetation always up to our shoulders, and often above our heads, consisting of hemlocks and other weeds, interspersed with superb tiger-lilies. Sometimes the track of a bear came as a most welcome aid to the pioneer, who had heavy work in choosing and pushing his way through this tangled wilderness of swamps, thickets, and torrents, the stony beds of which formed the only tolerable roads. Herr Radde, the first, and I believe the only European besides ourselves who has visited this recess of the mountains, accounts as follows for the rank undergrowth which covers it:—"The frosts of autumn kill down the summer's growth, and leave it rotting on the ground. The rich soil formed by its decay is covered by the winter snows, often to a height of 30 feet. As spring advances, the water of the melting snow percolates the ground; and when it is at last laid bare to the warm rays of a Caucasian sun, the herbs spring as from a hot-bed from the saturated soil." Whatever may be the cause, it is certain that the weeds of the Tzkenis Squali would gain the prize anywhere, and that a more curious sight than their gigantic leaves, and huge heads of blossom, it would be hard to find. This luxuriant vegetation produces swarms of mosquitoes and small black flies, which render a night spent in the forest almost unendurable. In addition to these inconveniences, we were persecuted by rain, which persistently fell every day, damping our goods, and spoiling the pleasure and comfort of our encampments. Altogether we were not sorry when we crested the last ridge that divided us from "Suanetia," or the upper basin of the Ingur, the fourth stage of our journey, and the last on the southern side of the main chain. The district we are now entering, the upper basin of the Ingur, is perhaps the most interesting of the whole Caucasus, whether regard is had to its scenery or its people. A large basin, 40 miles long by 15 broad is encircled by glacier-crowned ridges, and divided into numerous wooded gorges and meadow-basins by lower spurs. It is accessible from the outer world only by a narrow, and, at times,

impassable ravine, or by lofty mountain-passes. Hence the natives have always been considered as a people apart, and the upper glens have been renowned as harbouring the most savage and untameable of the Caucasian races—as being, in fact, a sink of iniquity, where robbers and murderers, who found their own homes too hot for them, could obtain a sure refuge. One would have thought the murder of so high an official as the Governor of Mingrelia by the Prince of Suanetia, eight years ago, would have brought down Russian vengeance on the district, and that military rule would have soon extirpated this nest of robbers. On the contrary, the policy pursued by the Government is one of mildness, or rather of indifference. The Russian officers have learnt, by experience, the difficulty and expense of maintaining any considerable force in so isolated a position, and very naturally prefer to let the villagers go on fighting out their own quarrels, in the hope that they will some day be exterminated, like the Kilkenny cats. The ten Cossacks stationed at Pari, at the lower or western extremity of Suanetia, are the entire executive force at the disposal of the chief of the district; and the upper or eastern valleys are, for all practical purposes, independent, and at full liberty to follow their own wicked ways. This eastern half has never been subject even to a native prince; each group of villages has governed itself under no other law than that

> "—— good old rule, that simple plan,
> That he should take who has the power,
> And he should keep who can."

Herr Radde very fairly describes the type of the inhabitants of these villages thus :—" In the expression of their countenances, insolence and rudeness are prominent. Hoary-headed obstinacy is there often united to the stupidity of savage animal life. These people have often each committed ten or more murders, which they generally consider not only allowable but necessary. They are naturally taciturn, and their whole expression, when attempting to take advantage of strangers, is most disagreeable."

Herr Radde, an official of the Government, and, we are bound to suppose, provided with all the aid it could give him, was robbed of a horse at Jibiani; he had to make a circuit through the mountains on account of local feuds, which had at the moment blazed out into open war, and so slink through Adisch by night, because of the notorious brigandage of the inhabitants. We had not time to study the Herr's book before we left Tiflis, and did not know the character of the people we were to encounter; so that it was with feelings of unmixed pleasure that we saw the towers of the highest group of villages appear before us.

Every house in Utschkul (a group of hamlets, of which Jibiani is the highest) is a fortress, built of stone, with slits for windows, and surmounted by a tower, which gives the place at a distance the look of a chess-board covered with nothing but castles. We spent Saturday in the village of Jibiani, where we got possession of a barn. Our reception was inhospitable, and during the day the people became more and more disagreeable; committing petty thefts and otherwise annoying us. Our tent being set out to dry, one of the sticks was carried off, and we had to pay some copecks to get it back. Altogether things looked like a row,—but we made a great impression by ostentatiously firing off and reloading our revolvers.

We found a man from a lower village, who promised to be ready with two horses to carry our baggage down the valley the next morning; when the time came, he seemed in league with the villagers, and the second horse failed. Knowing that we should be unable to make a start with local porters, we determined each to carry a saddle-bag, and be independent; meantime extortionate demands were made, which we partly conceded, partly resisted, while we got the horse loaded and the luggage in a heap. When the opportune moment came a start was ordered, and we marched out of the barn; but François and Paul stupidly loitered, and let the natives shut them in. A blow from my ice-axe quickly sent the door in; a ruffian then put himself in the way, but the application of a revolver-barrel to his face made him retire hastily. Forming a kind of hollow square, the horse in the middle, with our hands on our revolvers, we now marched out of the village by a sunk lane, where the inhabitants, yelling and jabbering, jumped down in front to bar our way, while others brandished weapons on either wall. A concession of some copecks to one rascal caused a scramble and diversion, during which we got away. There is no doubt that, but for our heavy armament, petty theft would have been turned into open robbery; fifteen barrels have always a moral effect, the difficulty lies in enforcing it without actual fighting, which, of course, would be the last resource, not only dangerous, but necessitating immediate flight from the country. Once clear of Jibiani, we passed on quietly through the lower hamlet, above a fine defile, and down a sharp descent to Davker, our horseman's home. Here he tried on his little game, and even went so far as to draw his pistol. He was quite at a loss what to do next, and we laughed at him so heartily, that he was glad in the end to renew the original engagement. There were only half-a-dozen people about, so we had no anxiety, and could take things easily. We secured two good porters, and in the afternoon set off up a fine lateral glen.

Time would prevent my entering into the details of the exquisite scenery through which we passed from here to Pari; but I cannot pass by unmentioned the icefall of the Adisch glacier (which we thought at the time, and still believe, far surpasses anything of the kind in the Alps), or the parklike verdure of the ridge which separates the north valley of Mushalaliz from the wooded gorge of the main stream of the Ingur. The path which follows this ridge from Adisch to Cumè is the loveliest imaginable. It winds under woods of birch, ash, oak, and fir, through thickets of rhododendron and azalea; where, at every break in the forest, the eye catches glimpses, on one side, of the green meadows and white-towered villages of the Mushalaliz valley; on the other, the deep-wooded ravine of the Ingur, and the snowy heads of the Leila group. Latal, lower down the valley, is in a situation of almost perfect beauty, with the graceful snow-cone of Tau-Totonal, or Tetnuld, closing one view, and the glacier-crowned, forest-girt Leila Mountains immediately opposite. A climb up the hillside above, reveals the whole southern face of the great wall of ice and rocks which stretches for 12 miles from Tetnuld to above Jibiani, and brings into sight on the north the king of all the Suanetian Alps; the double-peaked Uschba, which I can describe only by likening it to several Matterhorns, piled on the top of one another, and multiplied by two.

The topography of this upper basin of the Ingur is simple in its leading features, though complicated in details, such as the relations to one another of the upper glens. The main-chain of the Caucasus reaches its greatest elevation and true central point in the mountain mass which towers over its offshoots in the sources of the Ingur, as Monte Rosa towers over the ridges on its Italian side. Tau-Totonal must be over 16,000 feet in height, and the summits of the serrated range which stretches for several miles from it to the east, cannot average less than 15,000 feet. Three glaciers—the Nuamquam, the Gorosko, and the Adisch—flow down from it into three several glens; they descend to a level of about 7000 feet, which may be taken as the lowest point reached by glacier on the southern side of the Caucasus. The chain from Totonal to Uschba (called also Besotch Mountain by Radde) makes a considerable sweep to the north, and at least two large glaciers—the Thuber and Gatun Tau—descend from it into the Mushalaliz valley. Over one of these—the Thuber—the natives from the northern side often cross with merchandise. Uschba is a gigantic promontory, and, like so many of the highest peaks, is not on the watershed, but it is the only one I know of that is on the southern side.

West of Uschba the range is still covered with glaciers, across which two passes leading into the Baksan, and one into the Karatschai valley, are known to the natives. On the south side Suanetia is cut off from the world by the Leila group, the continuation of the limestone ridge, which, as I have before observed, runs parallel to the main chain along the whole of the western Caucasus. The passes over it were described to us as fatiguing, but not difficult.

From the ten Cossacks stationed at Pari we met with the greatest kindness; they did all in their power to make our rest there pleasant, and to facilitate our arrangements for crossing to the valley of the Baksan. We were delighted to hear that the Mahometans on the north side were, by all accounts, a most hospitable people, and that we need not fear among them the extortion, insolence, and ruffianism to which we had been exposed among the so-called Christians of Suanetia.

I now enter upon the fifth stage of our journey. The pass by which we crossed the main chain from the Nakra valley (a tributary of the Ingur, which falls into it some way below Pari) to the Baksan is about 10,800 feet in height. On the south side the scenery is wild and savage; on the north the massive snow-mountain called Tungzorun is a fine feature. Although the tract leads over snow-fields and a small glacier, the natives do not hesitate to take horses across. We found everywhere in the Caucasus horses taken over passes which no Swiss peasant would think of driving even a mule over. Uruspieh, the principal village in the Upper Baksan, is seven hours down the valley, in a dull and arid situation. A comfortable two-roomed house, built in the most massive style of wood architecture, is kept for the reception of strangers. The Princes of the place, Ismail and Hamzet, were very hospitable. Having made arrangements with them for the peasants who knew most about the mountain, and had been with Russian travellers to the verge of the glacier, to accompany us, we left on July 29th on our Elbruz expedition.

We found that to get at the mountain from this side, it was necessary to reascend to the head of the Baksan valley, which is filled by a large glacier. Just before reaching it we turned up a glen chiefly remarkable for the number of snakes we found in the grass, and for the striking ridge of columnar basalt which rose above it on the west. This glen was closed by an ice-fall, an outlet of the nevé-plateau of Elbruz; we slept near the foot of the glacier, where there was a rough châlet for the men. We got capital milk, cheese, and kaimak (Devonshire cream), and might have had a lamb, so the fare of a Caucasian Alp is not to be despised. The top of Elbruz (or Mingy Tau,

as all the people of the country call it), a flattened dome, was just visible.

The morning of the 30th we climbed the slopes on the true right of the ice-fall, which is beautifully broken into towers and pinnacles, and getting on to a spur of rock, found a convenient place for the tent, among broken crags, at a height of about 11,900 feet, some 500 feet below the great nevé-plateau, which spreads round the base of the mountain. By levelling a bit of ground, removing stones, and building a wall, we made our quarters tolerably snug. Meanwhile, as it was early in the day, some of the party paid a visit to the snow-plateau, and inspected the mountain, which in shape somewhat resembles an inverted tea-cup, and presents no apparent difficulty to the eye of the mountaineer. The afternoon was fine, and the view of the main chain opposite to us was splendid, specially an Ortler-like mountain (Tungzorun), and the north side of the two-headed Uschba or Besotchhita, which presents a most inaccessible appearance. The night was very cold; the water in an India-rubber bag, which we had filled overnight, was frozen inside the tent, into a solid sausage of ice, ere morning. At 2·10 A.M. (on Friday the 31st), we were off by the light of the setting moon. It was cold enough tramping across the "grand plateau," a black cloud resting on the dome above us, and lightning playing far away below over the steppes. Presently I diversified the proceedings by entirely disappearing in a concealed crevasse; as we were roped, the incident was only an amusing one, but considerable hauling was necessary before I could get out, for the crevasse was large, and the snow-crust on the side of the hole I had made, broke away when I tried to raise myself on it. Soon after, the slope steepened, the cold grew intense, and the wind almost unbearable; altogether the prospect was not cheering. The appearance of the morning star, which rose amidst flashes of lightning out of a thunder-cloud, hanging over the eastern steppe, caused a momentary sensation, but we relapsed into a state of frigid despair, which was not diminished by the sudden flight of our Mingrelian servant, fairly beaten by the intense cold. As we stood shivering at the base of the final cone, at a height of over 16,000 feet, it became a serious question whether we could go on; frost bites seemed not only possible but probable, and the wind did not abate. On the other hand, the rocks gave some shelter, and were less cold to the feet than snow. Looking back, we saw two of our porters advancing rapidly in our footsteps: we had almost decided to turn, when they came up, apparently fairly comfortable in their big sheepskins. I said, "If a porter will go on, I will go on with him" (François was complaining of his fingers). "If one

goes, all go," said Moore, and so we went on, and from this moment the cold became simply disagreeable, and no longer affected our morale.

A long grind up easy rocks—a short ice couloir, where we cut a few steps—the only approach to a difficulty on the mountain, and we were on the top of what had long been our sky-line, to see as much more rock above us. Doubts were even now expressed of our success, but we persevered, and almost suddenly at last gained the crest, and, turning to the west, faced the wind for a final fight. The ridge was broad and easy; with our hands in our pockets and our ice-axes under our arms, we tramped up until it culminated in a bare patch of rock with snow all round. This summit was one end of a horse-shoe ridge, enclosing a snow-plateau, evidently an old crater (all the rock about Elbruz is volcanic). We walked round this ridge to its extremity, and visited all its summits, which are three in number; under the furthest, a boss of rock, we found shelter, and a quite endurable temperature. Running about the ridge, we none of us felt any inconvenience from the rarity of the atmosphere. Our porters pointed out the neighbouring valleys, while we tried to identify the peaks in view. To the south and east the view was cloudless. We saw the mountains of the Turkish frontier between Batoum and Achaltzik, I believe the Black Sea, and the great peaks between us and Kazbek, which looked magnificent. The Pennines from Mont Blanc are nothing compared to the east chain seen from Elbruz. The Caucassian groups are finer, and the peaks sharper. To the north the steppe was covered with fleecy vapours. We were on the top from 10·40 till about 11 o'clock; before leaving we built a stone-man on the first peak, which appeared a trifle the highest. We had some difficulty in reconciling the shape of the summit with its appearance as seen from a distance, either from the south or north, when two peaks of equal height, separated by a considerable hollow, are visible. The gap between the second and third summits we visited was not more than 150 feet deep, and we were surprised at its being so conspicuous from a distance; at the same time we walked all round the ridge, and saw that on the west the slopes fell away abruptly towards the Karatchai; the light clouds which were now sweeping up in this direction certainly could not have totally concealed any summit nearly equal in height to that on which we were. My firm belief, in which I am supported by all my companions, is that we were on the western of the two summits, seen from below; and that the eastern point of the ridge we had struck in ascending appears from a distance as a second summit. The descent was tiresome over the rocks; they were so easy that one longed to

throw away the rope and "skedaddle." At our old halting-place we stopped to feed, and at 1 P.M. we broke away icicles from our hair which had been there since 3 A.M.

The snow was still in good order. We quickly returned to our bivouac, and thence to the Alp, where we were enthusiastically hugged and kissed by the other porters and shepherds, who had apparently never expected to see us again. The two porters who reached the top deserve great credit, as they came on their own account, being engaged and paid only to the bivouac; they were almost snow-blind the next day. Our return to Uruspieh caused great excitement, and, as soon as the porters had had time to tell their story, the room was filled by a crowd of wondering and excited villagers, while the air rang with a chorus of Allah-seasoned phrases of exclamation and astonishment. We should not have been believed had not the two villagers reached the top with us; as it was, the only person who professed disbelief was a Suanetian prince, who was over on a visit to the Uruspieh chiefs, and whom we had insulted on our first arrival, before we knew whence he came, by expressing very decided opinions upon the morality and manners of his subjects.

On leaving Uruspieh we were puzzled how to requite the kindness of our hosts. We had partially satisfied our consciences by presenting a drinking-cup to Ismail, the eldest brother, when the Princess, his sister, caused to be conveyed to us, through a domestic, a special request that we would leave behind for her use an article of toilet—one of the very few we had—which she had seen and admired; we of course gratified the Princess's wish, and yielded up the object on which she had set her affections—a big bath-sponge.

From Uruspieh we rode down in two days to Patigorsk, where we spent nearly a week, enjoying the luxuries of civilisation. We had now completed the programme with which we left England, but our journey was not altogether satisfactory. Owing to the impossibility of separating from our luggage, and leaving it to the tender mercies of the Suanetian villagers, we had failed to penetrate the Koschtan Tau group, or to gain any knowledge of it beyond the outside aspect of its steep southern face. We therefore determined now to supplement our travels by penetrating from Naltschik to the head of the valley of the Tscherek (a river to be carefully distinguished from the Terek), which has its source in the glaciers immediately at the base of Dych Tau and Koschtan Tau, and on the north of the peaks which overlook the sources of the Ingur and Rion. We proposed to make our way back to the post-road near Vladikavkaz by the valley of the Uruch.

In carrying out these plans we were much aided by the courtesy of General Loris Melikoff, the commandant of the troops in the northern Caucasus, who sent a Cossack up the valley of the Uruch to meet us, and give us any assistance we might require.

The limestone gorges, through which the Tscherek and Uruch have found a way out to the northern steppe, are of the most magnificent description. They are not mere cracks, like the Via Mala or Pfeffers, but enormous trenches cut down from the tops of the mountains to a depth of 5000 feet, in walls broken only by shelves and ledges, along which the paths to the upper villages find a circuitous and difficult passage. The magnificent trees which clothe these ledges add greatly to the effect of the defiles, which are both unequalled in Switzerland, although in deciding between them I should award the palm for savage wildness and grandeur to that of the Tscherek.

At Balkar, the upper group of villages in the Tscherek valley, we were entertained most hospitably by a Mohammedan chief. It is a day's journey to the glaciers at the head of the valley, which abounds in pasturages, which in summer support numerous flocks. A guard is stationed here to prevent the depretions of marauders coming from the south side of the chain.

We tented out for two nights at the junction of the two torrents which form the Tscherek, before crossing the Stule Veesk Pass to the Uruch, and as the weather fortunately cleared we obtained fine views of the east flanks of Koschtan Tau and Dych Tau. These two granite peaks (respectively 17,000 and 16,900 feet) would, but for the chance eruption of Elbruz, have been the true kings of the Caucasus, and one cannot help feeling a regret that such a bloated and uninteresting monarch of mountains as Elbruz should have put aside two such fine fellows. Dych Tau is a sharp rock-peak, very formidable to a climber, Koschtan Tau is a long icy crest, with escarped sides. We saw no way up either of them from the east. Two large glaciers descend into the head of the Tscherek valley; they are most incorrectly represented on the five-verst maps. The scenery of the valley of the Uruch, which we afterwards descended, is varied and beautiful: the inhabitants are Ossetes; they are less gentlemanly in their dress, but more so in their behaviour, than our old friends of the same tribe. Perhaps the presence of a Cossack smoothed away many difficulties.

We rode down to Ardonsk, two stages from Vladikafkas, whence we drove back over the Dariel to Tiflis, where we arrived on the 26th August. We made our way back to Kutais, *viâ* Borjom and Achalzich. From the summit of the hills between the latter place and Kutais we took farewell of the

Caucasus. By a piece of wonderful luck no vapour blurred the view; the whole chain from some distance west of Elbruz to Kasbek on the east was before us; we could distinguish every glacier on its southern flank, and were able to confirm and rectify our impressions of the relative heights of its peaks.

We returned to England by the Crimea, Odessa, and St. Petersburg.

In conclusion, I wish briefly to notice two points which have been taken up by the press.

The first is the claim set up for its countrymen by the 'Allgemeine Zeitung' to the first ascents of Kasbek and Elbruz, which was thus translated in an English paper ('Pall Mall Gazette,' September 12th):—

"A German paper remarks:—'It is a mistake to suppose that these mountains were ascended for the first time by the three Englishmen. In 1829, Adolf Kupffer, the mineralogist, K. A. Meyer, the botanist, and other philosophers, were sent out on a scientific mission into the Caucasus by the Academy of Sciences at St. Petersburg, and ascended Elbruz with some Circassian guides. The history of this expedition is given in Kupffer's "Voyage dans les Environs du Mont Elbruz dans le Caucase, &c., &c., 1829;" "Rapport fait à l'Académie des Sciences à St. Petersburg, 1830;" and also in Klaproth's "Nouveau Journal Asiatic" for January 1831. As for Kasbek, it was ascended by the geographer Moritz Wagner, brother of Rudolf Wagner, about 1844.'"

The falsity of these statements is so easily proved by reference to the original accounts of the expeditions referred to, that I should not have considered them worthy of the attention of the Geographical Society had they not been republished in this country. Newspapers ought surely to be both ready and glad publicly to correct statements proved to be untrue, and calculated to throw discredit on their countrymen, which, in pardonable ignorance, they may have published. The editor of the paper in question does not consider this his duty; and although he thought our journey of sufficient interest to insert a long private letter of my own (sent to him by Mr. Gifford Palgrave), he refused to publish a contradiction of the supposed German ascents, coming from a well-known member of this Society. This contradiction has since been printed in an enlarged shape in the 'Alpine Journal.'

The second point is peculiarly geographical, and it is one on which, as a member of the outside public, I am most anxious to elicit the opinion of this Society. Having kept up a moderate acquaintance with the atlases and gazetteers of the day, which, as you know, state the frontier of Europe and Asia to run along

the summit of the Caucasus, we ventured, on their authority, to remind the public that Kasbek and Elbruz, lying north of the Caucasian watershed, were as much in Europe as the Dom and Weisshorn are in Switzerland. On coming within reach of newspapers, we found that two gentlemen, "in common with many geographical friends," had "been much surprised" at the statement that the Caucasian watershed was the boundary of Europe, and had written to the 'Times' to protest against it, and to assert their belief that Kasbek and Elbruz were "mountains of the *southern* end of the Caucasus, which have always been considered by all geographers among the glories of Asia." This letter must have been somewhat hastily composed, since the answer to it from my friend Mr. Tuckett called forth a second, and more carefully written reply, in which our critics begin by admitting that they had accused us of going against "all geographers," knowing "MacCulloch, Blackie, Keith Johnston, Hall," &c., to be on our side. They went on to adduce a mass of evidence in support of the Don and Volga boundary, from geographers very respectable, no doubt, but mostly of a certain age.

In consequence of this controversy having been raised, the faith of the public in what I may almost call their geographical Bibles has been shaken, and the question is daily put, "Well, and where are those two mountains you went up?" I now ask you to enable me to answer it, and to inform inquirers whether they are justified in believing their atlases and gazetteers, or whether Europe and geography are to make a backward step to the frontier of the Don and Volga, or some other of those complicated and arbitrary lines of division which the latest authorities have, as it seems to me, wisely discarded in favour of the great partition wall built by Nature across the Caucasian isthmus.

IV.—*Effects of Forest Destruction in Coorg.* By GEORGE BIDIE, M.B., &c.

Read, January 25th, 1869.

COORG lies near the centre of the Western Ghâts, and chiefly on the eastern aspect of the range. On its western margin the crests of the chain rise up in bold peaked mountain masses, some of which attain the height of 5000 feet above the sea, and to the east of these the country consists of a series of low, long-backed hills, with intersecting deep-set valleys, running out towards, and gradually subsiding in, the table-land of Mysore. The province is chiefly drained by the Cauvery and its